

PATENT CLAIMS

1. Sensor for scanning the state of a spinning position in a thread-processing machine, in particular a ring spinning machine, with a light beam transmitter (236) and a light beam receiver (238) for the absorption of light which is emitted by the transmitter (236) and reflected by a part (254, Fig. 9) in a working position (e.g. a spinning position) of the machine, characterised in that the transmitter (236) and the receiver (238) are carried by a common carrier (212).
2. Sensor according to Claim 1, characterised in that the carrier (212) is designed as a housing for at least one of the two elements (transmitter and receiver).
3. Sensor according to Claim 2, characterised in that the carrier (212) is designed as a common housing for both elements (transmitter and receiver).
4. Sensor according to Claim 2 or 3, characterised in that the housing (212) is designed with at least one, at least selective, light-permeable part (240 and 242 respectively) for the light beam of the transmitter and/or for the light which is to be absorbed by the receiver.
5. Sensor according to Claim 4, characterised in that the housing (212) is designed with in each case one, at least selective, light-permeable part (240, 242) for the light beam of the transmitter and for the light which is to be absorbed by the receiver.
6. Sensor according to Claim 4 or 5, characterised in that the light-permeable part (240 or 242 respectively), or at least one of the light-permeable parts (240, 242), is designed as an optical lens.

7. Sensor according to Claims 5 and 6, characterised in that both light-permeable parts (240, 242) are designed as individual optical lenses.
8. Sensor according to Claim 4 and 5, characterised in that the carrier (212) is provided with a holding element (not shown) for at least one optical lens.
9. Sensor according to one of the foregoing Claims, characterised in that the carrier (212) is formed from one piece.
10. Sensor according to Claim 9, characterised in that the carrier (212) is formed from plastic.
11. Sensor according to one of the foregoing Claims, characterised in that the carrier (212) is provided with securing means (228) for the releasable securing of the transmitter and the receiver respectively.
12. Sensor according to Claim 11 and one of Claims 4 to 7, characterised in that the securing means (228) are arranged in such a way that they hold the transmitter (236) and the receiver (238) respectively in a predetermined position in relation to the part (240 and 242 respectively) allocated to this element.
13. Sensor according to one of the foregoing Claims, characterised in that several carriers (212) are connected by intermediate parts (204) to form one installation unit (202).
14. Sensor according to Claim 13, characterised in that the installation unit (202) is formed from one piece.
15. Sensor according to Claim 14, characterised in that the installation unit (202) is provided with means (208, 210) for the locating of this unit in a longitudinal carrier part.

16. Sensor according to Claim 15, characterised in that the installation unit (202) is designed as cover of a channel (200).
17. Sensor according to one of the Claims, characterised in that the carrier (212) is designed to carry a signal generator (LED) for the generation of a visually perceivable signal.
18. Carrier for a sensor according to one of the foregoing Claims, characterised by a securing part (204, 208, 210) and several housing parts (212), which are formed from one piece, whereby each housing part (212) is provided with suitable mountings (T1, T2) for accommodating the transmitter (236) and the receiver (238) respectively.
19. Carrier according to Claim 18, characterised in that the securing part (204, 208, 210) is designed as a cover of a channel (200).
20. Carrier according to Claim 18 or 19, characterised in that the carrier is formed from plastic.
21. Carrier according to one of Claims 18 to 20, characterised in that each housing part (212) exhibits at least one, at least selectively light-permeable part (240, 242).
22. A housing part for an optical sensor with a part (240 or 242 respectively), which exhibits a relatively high light permeability, and another part (214, 216, 218) which exhibits a relatively low light permeability, characterised in that the two parts (240, 242, 214, 216, 218) are formed from one piece.
23. A housing part according to Claim 22, characterised by two parts (240, 242) with relatively high light permeability for a sensor, as well as with a transmitter unit (236) as well as a receiver unit (238), whereby the said two parts (236, 238) are separated from one another by a part (244) with relatively low light permeability.

24. A housing part according to Claim 22 or 23, characterised in that the (and for preference each) part (240, 242) of relatively high light permeability is designed as an optical lens (Fig. 10).
25. A housing part according to Claim 24, characterised in that the optical lens bundles or scatters the beam which is intended to be emitted by the transmitter (26) or is intended to be received by the receiver (238).
26. A housing part according to one of Claims 22 to 25, characterised in that the housing part (212) is provided with means (228, T1 and T2 respectively) in order to hold a sensor element (236 and 238 respectively) in relation to a part (240 and 242 respectively) of relatively high light permeability.
27. A housing part according to one of Claims 22 to 26, characterised in that the part is formed from plastic.
28. A housing part according to Claim 27, characterised in that the part is manufactured by a casting or moulding process, for preference by injection moulding.
29. A housing part for a visual display, with a part (226) which exhibits a relatively high permeability for visible light, and another part (214, 216, 218) which exhibits a relatively low light permeability, characterised in that the two parts (226, 214, 216, 218) are arranged in such a way that a light source in a predetermined position inside the housing can only be visually perceived from a predetermined area outside the housing.
30. A spinning machine characterised by components according to one of the foregoing Claims.

31. A ring spinning machine according to Claim 1, characterised in that the components serve to provide the design of a sensor arrangement for the spinning position state.
32. A ring spinning machine according to Claim 30, characterised in that the sensor system is secured to the ring frame.
33. A ring spinning machine according to Claim 30 or 31, characterised in that a transmitter/receiver pair is provided for per spinning position.